

# PART X: Timber Harvesting Planning and Operations

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## 14. TIMBER HARVESTING PLANNING & OPERATIONS

### 14.1 Balancing priorities for stand harvesting

Timber will be harvested in a manner consistent with the objectives and mandate of the ALRF, and objectives set by government in ALRF permit and license documents, including this approved Management Plan.

Extensive mortality and stand damage events due to factors such as weather events and forest health agents (e.g. wind or ice/snow damage) and forest health agents (e.g. bark beetles and stem rots) will affect timber harvesting priorities and scheduling. **Two strategies are employed to rationalize timber harvesting and forest development in context of the allowable annual cut:**

- To actively address current losses of timber or timber values as they occur, by salvaging damaged or dead timber with merchantable value, and
- To direct timber harvesting towards those stand types most susceptible to catastrophic or substantial losses, thereby partially anticipating and pre-empting future losses.

**In general, harvesting efforts will be directed in the following descending order of harvest priority:**

1. Timber infested by insects,
2. Salvage of deteriorating, dead, and dying merchantable timber,
3. Silvicultural rehabilitation of productive sites occupied by stands of steadily declining quality and vigour,
4. Timber significantly affected by disease, including but not limited to stem rots and root rots,
5. Timber at risk of infestation by insects,
6. Timber of gradually declining vigour, and,
7. Healthy, vigorous timber.

Deciduous species may be harvested when appropriate markets are available.

Exceptions to the standard harvesting priority will be made by the ALRF on a case by case basis, where necessary to facilitate specific research and demonstration projects, or other operational requirements.



Many areas at the ALRF logged between 1920 and the late 1950's now have productive second-growth stands, and form a significant component of current timber supply at the ALRF

## 14.2 Cutblock size and harvesting adjacent to another cutblock

### 14.2.1 General Provisions

As per its current tenure provisions, the Aleza Lake Research Forest Society undertakes its timber harvesting operations under Occupant License to Cut L45514. Therefore, the ALRF is defined as a “minor tenure” holder under Forest Act and FRPA definitions.

Notwithstanding the ALRF’s status of a minor tenure, considerations relating to *maximum cutblock size* and *harvesting adjacent to another cutblock*, have been considered in this management plan relative to their impact on other forest resources, and for landscape planning purposes.

**Under this Management Plan, cutblock size and adjacency for timber harvesting operations is guided by the following statements:**

1. Manage within the target patch size distributions specified in this plan.
2. The design of larger cutblocks within the ALRF (especially those approaching or greater than 60 hectares of continuous non-greened-up area) will be similar to and emulate the range of irregular sizes and shapes of natural disturbances that tend to occur within SBSwk1 forest types in the ALRF vicinity.
3. ALRF Small Gap and Large Gap harvest openings as per the target patch size distribution (and corresponding silvicultural systems) are intended to provide targets for emulation of smaller-scale and gap disturbances within the ALRF landscape.
4. A “greened-up” stand, for the purposes of this Plan is defined as any of the following: (a) a reforested stand stocked in accordance with applicable even-aged stocking standards, in which at least 75% of the net area to be reforested under the Site Plan has a consistent average height of  $\geq 3$  metres, based on the tallest 200 sph of trees on the area, or (b) a partial-cut stand in which  $> 20 \text{ m}^2/\text{ha}$  of live basal area has been retained, or (c) a partial-cut stand in which  $> 40\%$  of the live basal area of the stand that existed prior to the harvest entry has been retained post-harvest.

Grapple Skidder at the ALRF, Winter 2007/08





Aerial view of the north-central ALRF in the Ridge Road area, looking west (Fall, 2018)

### 14.2.2 Forest-level targets for harvest patch size distribution

The frequency and spatial distribution of harvest patch sizes resulting from both harvest operations and natural disturbances is an important benchmark for forest-level management at the ALRF, with cross-linkages to biodiversity, silvicultural planning, silvicultural systems, and total-chance harvest panning.

The ALRF sets the following landscape-level targets for harvest patch-size distribution (Table 17), these will guide the application and proportions and extent of clearcut and partial-cut silvicultural systems on the ALRF landscape.

**Table 17: ALRF landscape-level acceptable targets and range of harvest patch-size distribution** as a percentage of the net harvested area (excluding non-harvestable and non-productive areas) over each previous 5 or 10 year period.

Patch Size Type	Applicable opening sizes (non-greened-up)	Target percentage (% of net harvest area)	Acceptable range (% of net harvest area)
Small Gap	Single-tree to $\leq 0.5$ ha.	5%	3 – 7%
Medium Gap	$> 0.5$ ha, $\leq 4$ ha	10%	7 – 13%
Clearcut (Class I)	$> 4$ ha. to 60 ha.	45% *	30 – 55% *
Large Clearcut (Class II)	$> 60$ ha.	40% *	30 – 50% *
			* Cumulative total of % Class I and II clearcuts cannot exceed 90%



Winter harvesting to protect forest soils is standard practice on the ALRF's fine-textured soils and wet climate

### 14.3 Timber utilization standards

Minimum timber utilization standards are defined as per Occupant License to Cut 45514 for the Aleza Lake Research Forest, and this Management Plan. Timber utilization and related waste and residue surveys and assessments will also specifically consider and incorporate post-harvest Coarse Woody Debris and Wildlife Tree retention objectives specified by this Management Plan, or any operational plans consistent with this Management Plan.

### 14.4 Anticipated harvest methods

The harvest method or technology on any given site (including season and conditions of harvest) will be consistent with the approved professional Site Plan, and reflect efficient and/or effective methods of harvesting suitable to meet the site conditions, harvest season, management objectives, prescribed timber utilization levels, and relevant ecological considerations for the Site Plan.

Most historical logging has tended to be winter logging on frozen soils or snowpack conditions, and includes log- or tree-length ground skidding, yarding, or hoe-chucking.

On most ALRF harvest areas, timber will be harvested using ground-based equipment configurations appropriate to the local terrain, soils, logging season and site sensitivity. These typically may include, but not be limited to:

1. Tracked or Rubber-tired skidding,
2. Mechanical and/or hand-felling,
3. Low ground pressure machines, and
4. Combinations of the above.

Very rarely, aerial or cable yarding may be used, particularly in specific circumstances where terrain or road access limits or prevents the use of conventional ground-based yarding systems. These circumstances include:

- Steep or severely gullied terrain. Or,
- Areas where slope instability or other barriers limit suitable ground access.

Variations to harvest methods will be made for specific research purposes or specific prescriptions.

#### 14.5 Woody Fuel Reduction, Wildfire / Hazard Mitigation, and Smoke Management

Measures for woody fuel reduction and fire hazard abatement will be consistent with the *Wildfire Act* and the *Forest Planning and Practices Regulation*, as amended from time to time.

The ALRF will ensure that post-harvest / post-treatment fire hazard assessments and timely fire-hazard abatement measures (where necessary) are undertaken on harvest (i.e. – roadside log processing areas) or treatment areas (such as thinning) with heavy or continuous accumulations of coniferous fine fuels. Fire hazard abatement strategies will consider and be consistent with measures for conservation of wildlife habitat, including CWD retention objectives at the stand- and landscape level, and soil nutrient conservation.

Activities undertaken by the ALRF permit holder under this Management Plan will comply with the *BC Environmental Management Act*, and the *Open Burning Smoke Control Regulation*, as amended from time to time.

ALRF shelterwood cut, 2014

